

# Climate Change:

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## *Your Passport To The Facts*

# WISDOM

While many warmings have reached the popular press about the consequences of a potential man-made warming of the Earth's atmosphere during the next 100 years, there remains no scientific evidence that such a dangerous warming will actually occur. As the United Nations and national governments consider costly measures to restrict greenhouse gas emissions, it is important to remember that the fundamental issue should be the potential for harmful or irreversible environmental effects, not merely increases in global average temperatures. To date, there is no evidence that any such harmful consequences are at hand, nor is there any evidence of any warming beyond the natural fluctuations common to the Earth's vastly complex (and variable) ecosystem.

This pamphlet was prepared by the Global Climate Coalition (GCC), the leading U.S. business voice on climate change policy and science issues. GCC was created to coordinate business participation in the ongoing climate change debate. This "passport to the facts" is intended to introduce readers to essential facts about climate change.

## FACT:

The greenhouse effect is a natural phenomenon produced by naturally occurring atmospheric gases. To date, there is no evidence to demonstrate the climate has changed as a result of any "enhancement" to this natural phenomenon by man-made greenhouse gases.

- The greenhouse effect is the natural process in which a protective blanket of atmospheric gases retains warmth when the sun's energy is absorbed and re-radiated from the surface of the Earth. Without the greenhouse effect, the energy would escape into space, leaving the Earth much colder and uninhabitable.
- Carbon dioxide is only one of many so-called greenhouse gases. Others are methane, chlorofluorocarbons and water vapor, which is by far the biggest contributor to natural greenhouse warming.
- Carbon dioxide is a natural atmospheric component. It is a by-product of human and animal respiration, a product of combustion, and the vital compound for plant photosynthesis.
- The vast majority of man-made greenhouse gases (two-thirds) entered the atmosphere after 1940; however, the majority of the observed temperature increase over the past 100 years occurred before 1940.
- The Intergovernmental Panel on Climate Change, the U.N. body charged with evaluating and tracking climate science, has concluded that "it is still not possible to attribute any or all of the warming of the last century to greenhouse gas-induced climate change."

*"The big question is whether we're looking at a change in climate, or an extreme in an unchanging climate. No one knows."*

— Meteorologist  
National Weather Service

## FACT:

The notion that scientists have reached consensus that man-made emissions of greenhouse gases are leading to a dangerous level of global warming is not true.

- A Gallup poll of 400 climate experts from the American Meteorological Society and the American Geophysical Union revealed that fewer than one in five experts believe that the slight warming observed over the past 100 years was human-induced.
- In a survey of more than 100 scientists, many of whom were involved in the preparation of the original Intergovernmental Panel on Climate Change (IPCC) assessment, 40 percent disagreed with the "conclusions" in the policymakers' summary. The survey was conducted by Dr. Fred Singer, former director of the U.S. National Weather Satellite Center, and Dr. J. Winston, former director of the Climate Analysis Center for the U.S. National Weather Service.
- Nearly all of the survey respondents agreed with the statement in the IPCC report that, "it is not possible to attribute all, or even a large part, of the observed global-mean warming of 0.5 degrees Celsius [about one degree Fahrenheit] since 1890 to the enhanced greenhouse effect on the basis of observational data currently available."

"One might think that growing skepticism about warming would have some influence on the public debate, but the insistence on scientific unanimity continues unabated. Unanimity in science is virtually nonexistent on far less complex matters. Unanimity on an issue as uncertain as global warming would be surprising and suspicious."

— Dr. Richard Lindzen  
Professor of Meteorology  
Massachusetts Institute of Technology

## FACT:

Computer climate models, which are the basis for "predictions" of global climate change, suffer from severe flaws.

- Climate models vary significantly about the magnitude of warming that would be produced by a doubling of atmospheric carbon dioxide over the next century, ranging from 1.5 to 4.5 degrees Celsius.
- Early climate models "predicted" that during the past 15 years greenhouse emissions should have led to an increase in global temperatures of 0.3 to 0.5 degrees Celsius. However, highly accurate satellite temperature readings (analyzed by the U.S. National Aeronautics and Space Administration) show no increase in global average temperatures during this period.
- Scientists do not fully understand the important roles oceans and clouds play in the climate's response to increased carbon dioxide, thus these critical factors have not yet been well accounted for in models.
- Even though there is continuous improvement, many scientists, including modelers themselves, say reliable climate models are at least 10 years in the future.

"In climate modeling, nearly everybody cheats a little. Although models of how the ocean and the atmosphere interact are meant to forecast the greenhouse warming of the next century, when left to their own devices they can't even get today's climate right."

— Richard A. Kerr  
Journalist  
Science magazine, Vol. 265, Sept. 1994

## FACT:

Science does not support claims that recent floods, hurricanes and other extreme weather events are the fingerprint of human-induced climate change.

- According to a comprehensive study of weather and climate change by Accu-Weather, hurricane frequency is not increasing, the number of violent tornadoes is not increasing, and temperature and precipitation extremes are not more common now than they were 50 to 100 years ago.
- Apparent increases in hurricane intensity — measured in terms of estimated damage costs — are largely an illusion, a reflection of the fact that coastal property values have risen dramatically over the years as population has grown and as more property has been developed in areas normally subjected to severe weather events (i.e., coastal zones and flood plains).
- The World Meteorological Organization cautions against linking extreme weather incidents to greenhouse gas-induced warming.
- According to IPCC lead author Neville Nicholls, artificial "trends in the frequency and intensity of extreme weather events" have been created by improved observational techniques and computer models.

*"The range of normal natural climate variation is large. Climate extremes are nothing new. Climate records are continually being broken....Changes in climate change which indicate a genuine long-term trend can only be identified after many years."*

— Dr. John Houghton  
Working Group Chairman  
Intergovernmental Panel on Climate Change

## FACT:

Energy efficiency has improved dramatically in the United States and in other industrialized countries over the past two decades.

- Measured in terms of energy consumption per unit of Gross Domestic Product, the United States has improved its energy performance by 33 percent since 1973. Japan improved by 37 percent, while six European nations averaged a 29 percent improvement.
- Between 1973 and 1988, the United States built 20 million new homes, put an additional 50 million vehicles on its roads, and increased its Gross National Product by 46 percent, while increasing energy consumption by only 7 percent.
- The U.S. has doubled new passenger car fuel economy over the past two decades, a rate of improvement twice as high as in any other country.
- Even with a 55.8 percent increase in production, the U.S. manufacturing sector reduced carbon dioxide emissions from 1974 to 1988 by 24.9 million metric tons of carbon, or 8.1 percent. These efficiency improvements reduced carbon dioxide emissions intensity by 41 percent.



*"The potential for future improvements in energy efficiency in many industries is dependent upon the development and commercial deployment of new technologies, which cannot be mandated through targets and timetables."*

— "Energy Efficiency in U.S. Industry"  
The EOP Group  
Washington, D.C.  
October 1993

## FACT:

The overwhelming majority of future greenhouse gas emissions will come from developing nations.

- Developing nations are now the world's leading producers of carbon dioxide, according to the U.S. Department of Energy, emitting 52 percent of the world's energy-related carbon dioxide in 1992.
- The World Energy Council estimates that global energy demands will grow between 130 and 200 percent by the year 2020; 85 percent of that energy growth will occur in developing nations.
- The U.N. Framework Convention on Climate Change currently places only minuscule greenhouse emissions reduction requirements on developing nations.
- According to Intergovernmental Panel on Climate Change (IPCC) projections, developing countries will be responsible for 68 percent of all energy-related carbon dioxide emissions by the year 2025, rising to as high as 76 percent by 2050.
- By the year 2000, the United States and Western Europe each will contribute only 19 percent of man-made global greenhouse gas emissions. The IPCC estimates that these shares will drop to about 16 percent by 2015 and to 12 percent by 2050.

*"The developing countries' need for energy...means that a rapid increase in the world's emissions of carbon is inevitable. The good news is that economic growth is one of the best routes to increase efficiency."*

— "All That Gas"  
The Economist, June 18, 1994

## FACT:

No evidence exists to compel nations to make additional commitments to emissions reductions for the post-2000 period.

- Highly accurate satellite readings show no warming trend in global mean temperatures over the past 15 years.
- The Intergovernmental Panel on Climate Change (IPCC) acknowledges that the slight temperature change over the last century is consistent with natural variability in climate.
- Observational data continue to defy the forecasts of computer-based climate models; the predicted fingerprints of climate change are not appearing.
- A study by the U.S. Office of Technology Assessment and Battelle Pacific Northwest Laboratory concluded that delays of 10 or 20 years in implementing emissions stabilization will have little effect on ultimate atmospheric carbon stabilization.
- Voluntary energy efficiency and joint implementation measures that result in greenhouse emissions reductions will continue beyond the 2000 benchmark, with or without a formal international agreement, because they make sound economic sense.

*"Large savings (on the order of trillions of dollars) are available from distributing international abatement efficiently rather than using naive allocations like holding regional emissions at current levels; these savings may be particularly large for developing nations."*

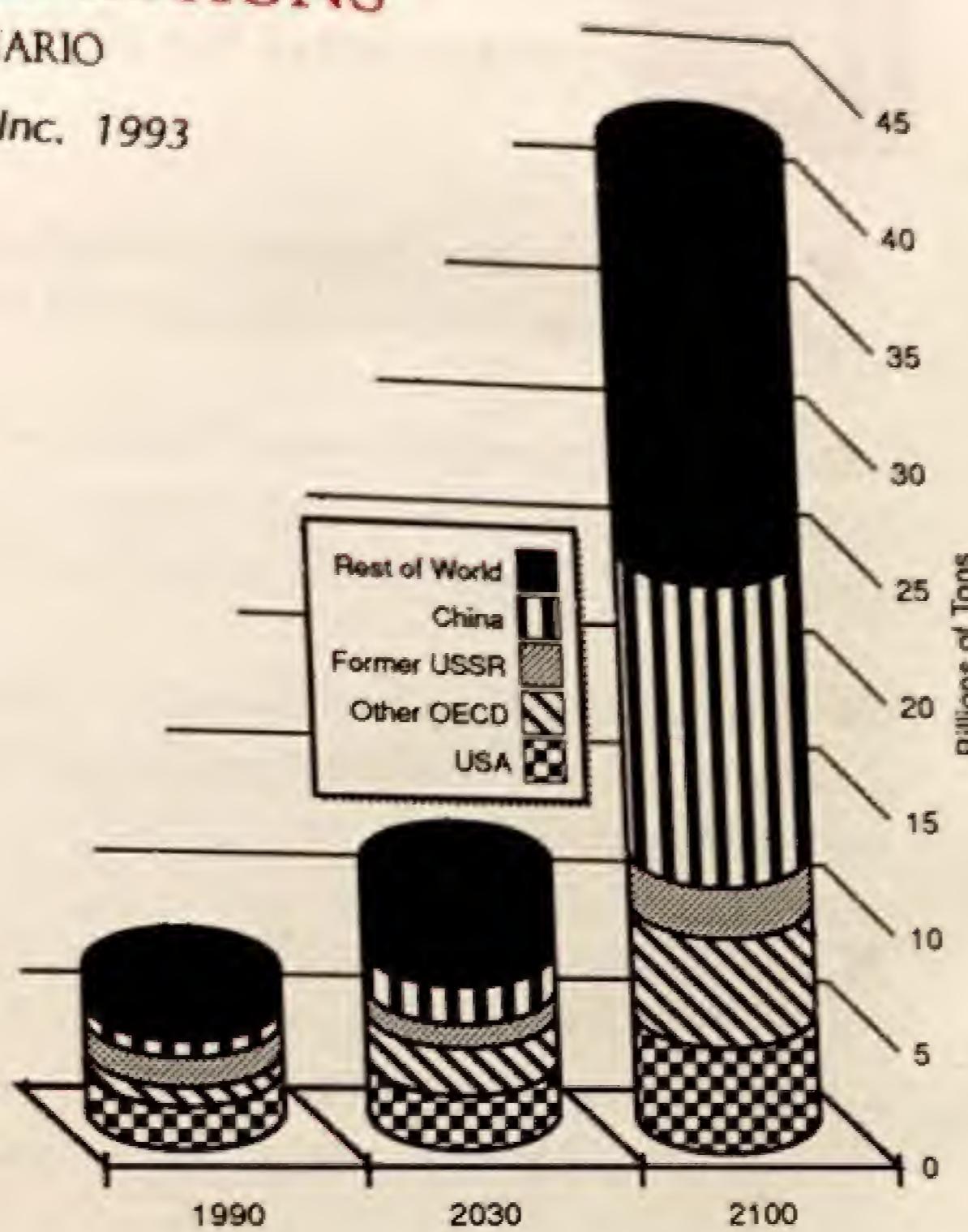
— "Climate Treaties and Models"  
U.S. Office of Technology Assessment  
Background Paper, 1994

# PRESENT AND PROJECTED GLOBAL CARBON EMISSIONS

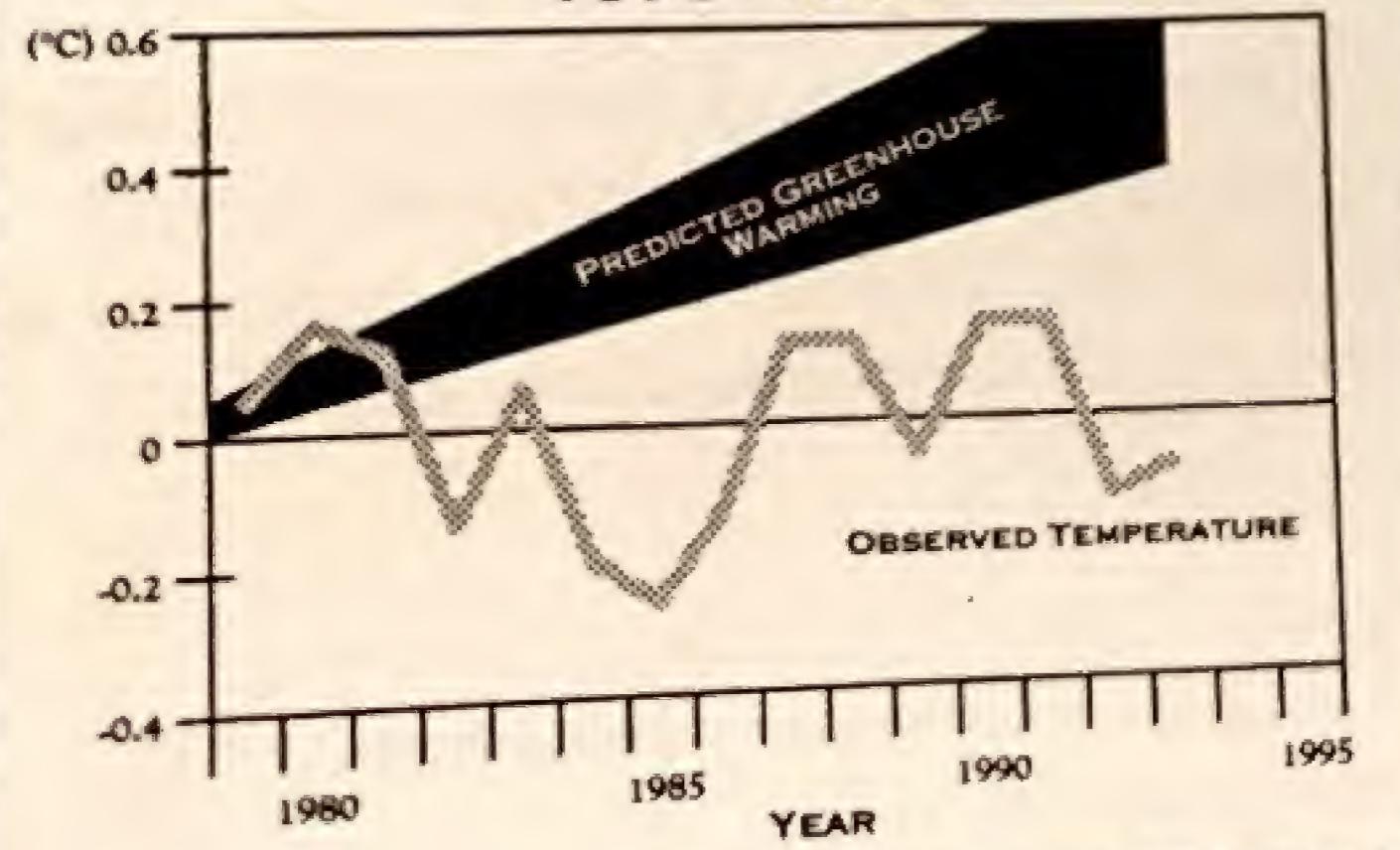
UNDER A BUSINESS AS USUAL SCENARIO

Source: Resources Data International, Inc. 1993

More than 80 percent of the projected increase in greenhouse gases over the next 100 years will come from the developing world, not from the United States, Japan or the European Community.



GLOBAL AVERAGE TEMPERATURE  
1979 - 1994



Temperature readings taken from the National Oceanic and Atmospheric Administration's TIROS-N satellites continue to show temperature changes that are one-fifth of what computer models indicate they should be.

## Glossary

**Accu-Weather** — The world's largest commercial weather firm. With a staff of over 70 meteorologists, Accu-Weather is the world leader in weather forecasting, data, information and communications to more than 6000 clients worldwide.

**Computer Models** — Computer programs that are designed to mimic the complex interactions governing climate change. Also referred to as general circulation models (GCMs).

**Global Warming** — Theory that the temperature of the Earth is being increased due to the man-made emissions of greenhouse gases.

**Greenhouse Effect** — Natural envelope of certain heat-retaining gases that keeps the Earth about 60° F warmer than if these gases did not exist.

**Greenhouse Gases** — Gases that retain heat in the Earth's atmosphere. These gases occur through both natural and man-made processes. Major greenhouse gases include water vapor, CO<sub>2</sub>, methane and CFCs.

**Intergovernmental Panel on Climate Change (IPCC)** — Panel established by the World Meteorological Organization and the U.N. Environment Program. It prepares reports on the issue of climate change, its environmental, economic and social impacts and possible national and international responses to such changes and provides advice to the INC.

**Office of Technology Assessment** — An agency of the U.S. Congress, OTA was created in 1972 to help policymakers anticipate and plan for the consequences of technological changes.

**U.N. Framework Convention on Climate Change** — Treaty signed at the 1992 Earth Summit with an ultimate objective to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [man-made] interference with the climate system." While no legally binding level of emissions is set, the treaty states that "aim of returning these emissions to the 1990 levels."

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